Hot Air Balloon Activity

Standard: 3240-03 : Students will relate forces and energy to motion.

Objective: 3240-0302: The student will identify the role of energy in motion.

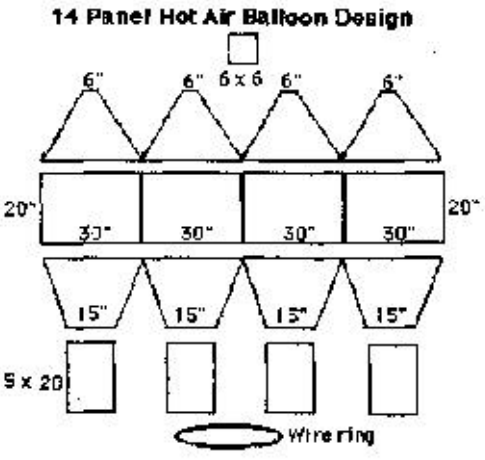
Intended Learning Outcomes:
1a. Make observations and measurements (uses instruments as appropriate).
1d. Make estimations and predictions based on observations and current knowledge.
2a. Identify variables and describe relationships between them.
2c. Plan field studies, controlled experiments, and other investigations.
2g. Construct models and simulations to describe and explain natural phenomena.

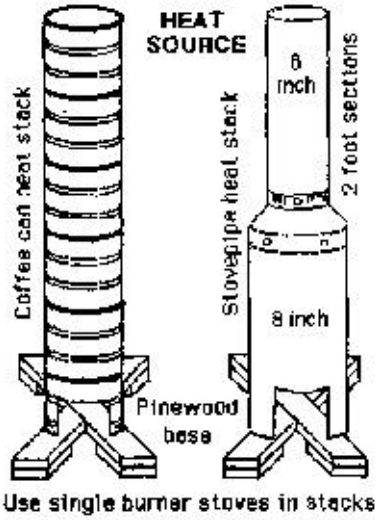
In this activity the student will build a hot air balloon that will remain aloft for a period of time. This balloon will also demonstrate how hot air rises and once cooled off, will return the balloon to the ground.

Rules
1. Your hot air balloon is to be constructed from fourteen standard sheets of tissue paper (20 x 30 inches). Only tape, glue, or glue stick is allowed to build your balloon.
2. Your hot air balloon will have a minimum 12 inch diameter opening held open by a thin wire (#22 gauge electrical hook-up wire is good, 36 inches long). This allows the hot air balloon to be easily filled by the heat source.
3. No other materials are permitted.
4. No heat source may be carried aloft by the hot air balloon.
5. All launches will use the same heat source provided by the teacher.
6. As a contest, timing will commence when the balloon is released above the heat source and will stop when the balloon touches the ground or any object attached to or resting on the ground.
7. The winner will be the balloon that was airborne for the longest duration.

Use safe operating procedures to make sure students are aware of any possiblity of getting burned.

Hints
Use bright colored tissue paper so it will be easy to see. When you glue your balloon together be patient. To repair small holes and tears use scotch tape. Choose a cold day to launch your balloons. The colder the temperature, the higher the balloon will fly. Good Luck!





Safety concerns:


Teachers and students, be sure to keep all Electrical and Heat Safety Rules that are specified by your teacher and in all general laboratory experiences.

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